

Title (en)
Process for forming semiconductor thin film

Title (de)
Verfahren zur Herstellung einer Halbleiterdünnschicht

Title (fr)
Procédé de formation d'un film fin semi-conducteur

Publication
EP 0421605 B1 19980527 (EN)

Application
EP 90309592 A 19900831

Priority
JP 23394089 A 19890907

Abstract (en)
[origin: EP0421605A1] A process for forming a semiconductor thin film by forming an amorphous semiconductor film on a substrate having a surface comprising an amorphous insulating material and seed crystals arranged at desired positions, applying heat treatment on the amorphous semiconductor film and growing crystals by solid phase growth with the seed crystals as the origination points is characterized in that high frequency energies with different frequencies are supplied to a susceptor having the substrate mounted thereon and a target holder to irradiate the ions generated between the susceptor and the target holder to the substrate and remove the surface adherents on the substrate, and subsequently an amorphous semiconductor film is formed on the substrate within the same apparatus.

IPC 1-7
H01L 21/20

IPC 8 full level
C30B 1/02 (2006.01); **H01L 21/20** (2006.01); **H01L 21/324** (2006.01); **H01L 21/84** (2006.01)

CPC (source: EP US)
H01L 21/02381 (2013.01 - EP US); **H01L 21/02422** (2013.01 - EP US); **H01L 21/0245** (2013.01 - EP US); **H01L 21/02488** (2013.01 - EP US); **H01L 21/02496** (2013.01 - EP US); **H01L 21/02513** (2013.01 - EP US); **H01L 21/02521** (2013.01 - EP US); **H01L 21/02524** (2013.01 - EP US); **H01L 21/02529** (2013.01 - EP US); **H01L 21/02532** (2013.01 - EP US); **H01L 21/02535** (2013.01 - EP US); **H01L 21/02546** (2013.01 - EP US); **H01L 21/02598** (2013.01 - EP US); **H01L 21/02631** (2013.01 - EP US); **H01L 21/02661** (2013.01 - EP US); **H01L 21/02667** (2013.01 - EP US)

Citation (examination)
• US 4824546 A 19890425 - OHMI TADAHIRO [JP]
• EP 0306153 A1 19890308 - CANON KK [JP]
• Applied Physics Letters, vol. 48, no. 12, 24th March 1986, pp. 773-775
• Japanese Journal of Applied Physics, vol. 26, no. 11, November 1987, pp. 1816-1822
• Journal of Applied Physics, vol. 49, no. 11, November 1978, pp. 5595-5601

Cited by
EP0709897A4; EP0609867A3; CN1052564C; CN100416750C; US6610142B1

Designated contracting state (EPC)
DE FR GB IT NL

DOCDB simple family (publication)
EP 0421605 A1 19910410; **EP 0421605 B1 19980527**; DE 69032340 D1 19980702; DE 69032340 T2 19981008; JP H0395922 A 19910422; US 5484746 A 19960116

DOCDB simple family (application)
EP 90309592 A 19900831; DE 69032340 T 19900831; JP 23394089 A 19890907; US 27030994 A 19940705